SUBCHAPTER 2.5

NOISE

2.5 Noise

This subchapter of the EIR summarizes the Sugarbush Residential Development Project Environmental Noise Assessment prepared by Pacific Noise Control, which is contained in Appendix G.

2.5.1 Existing Conditions

2.5.1.1 *Noise Descriptors*

Noise has been simply defined as "unwanted sound." Sound becomes unwanted when it interferes with normal activities, causes actual physical harm or has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). Equivalent sound levels are not measured directly, but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA) adjusted to reflect only those frequencies that are audible to the human ear. A-weighted decibels approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum.

The equivalent sound level (L_{eq}) represents a steady-state sound level containing the same total energy as a time-varying signal over a given sample period.

The Community Noise Equivalent Level (CNEL) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of 5 dB to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and the addition of 10 dB to sound levels at night between 10:00 p.m. to 7:00 a.m. These additions are made to the sound levels at these time periods to account for increased human sensitivity to sound during the evening and night hours, when there is a decrease in the overall amount and loudness of noise generated, as compared to daytime hours. During those hours, the sound seems louder and is weighted accordingly.

2.5.1.2 *Traffic Noise Elements*

The level of traffic noise depends on the volume of traffic, the speed of traffic, and the number of trucks in the flow of traffic because it is a combination of the noise produced by engines, exhaust and tires. Generally, heavier traffic volumes, higher speeds and greater numbers of trucks increase the loudness of traffic noise. Because of the logarithmic nature of traffic noise levels, a doubling of the traffic results in a noise level increase of three dBA. Based on the Federal Highway Administration (FHWA) community noise assessment criteria, this change is barely perceptible. The truck mix on a given roadway has a substantial effect on CNEL; as the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase.

2.5.1.3 *Existing Ambient Noise Levels*

To determine the existing noise environment, a measurement was taken at the Project site on May 22, 2003 for a 30-minute period during the 11:00 a.m. hour. The site was selected to provide a relatively unobstructed view to Buena Creek Road (Figure 2.5-1, Noise Measurement Location). The existing ambient noise level measured on the Project site was 52 dBA L_{eq}.

The monitoring location was modeled to compare actual readings with predicted readings, in order to calibrate the noise model. The reader is referred to Appendix G for specifics. The modeled existing ambient noise level at the measurement location was two dB greater than the measured noise level. This generally confirms the assumptions used in the noise model, with the difference likely due to the complex topography in the area.

2.5.1.4 *Existing Noise-sensitive Land Uses*

Noise-sensitive land uses (NSLUs) include uses associated with indoor and/or outdoor activities that may be subject to stress and/or substantial interference from noise. NSLUs include any residence, hospital, school, hotel, resort, library, or other facilities where quiet is an important attribute of the environment.

Existing NSLUs in the Project vicinity include residences along Buena Creek Road, Lone Oak Lane, Cleveland Trail and Fredas Hill Road Existing development immediately abuts portions of the western (Lone Oak neighborhood) and northern (existing Sugarbush Drive) Project boundaries. Future occupants of the Proposed Project also would be considered NSLUs.

2.5.1.5 *Regulatory Framework*

The County addresses two separate types of noise sources: mobile and stationary. In the context of the noise analysis, transportation noise levels associated with the Proposed Project are regulated by Policy 4b of the Noise Element in the County General Plan. County Noise Ordinance Section 36.404 governs operational noise levels. Sections 36.409 and 36.410 address general construction noise levels and impulsive noise levels[1], respectively.

Off-site Project impacts generally focus on transportation-related noise associated with increases in project-related vehicular activity. Noise level increases and impacts attributable to development of a project are estimated by comparing the "plus project" ADT to the "without project" ADT (refer to Subchapter 2.4, Transportation/Traffic, of this EIR).

County of San Diego Noise Element

The County has adopted interior and exterior noise standards as part of the Noise Element in the General Plan for assessing the compatibility of land uses with transportation-related noise impacts. For assessing noise impacts to sensitive residential land uses, the County requires an exterior noise level of 60 dB CNEL or less for outdoor living areas and an interior noise standard of 45 dB CNEL.

County of San Diego Noise Ordinance

Section 36.404 of the County Noise Ordinance provides performance standards and noise control guidelines for determining and mitigating non-transportation (stationary) noise source impacts to residential properties. The purpose of the noise ordinance is to protect, create and maintain an environment free from noise and vibration that may jeopardize public health or welfare, or degrade the quality of life.

According to County stationary source exterior noise standards, no person shall operate any source of sound at any location within the County or allow the creation of any noise on a property that causes the noise levels to exceed the exterior noise limits at the property boundary within non-industrial zones. The noise ordinance sets an exterior noise limit for residential land uses adjacent to the property of 50 dBA L_{eq} for daytime hours of 7:00 a.m. to 10:00 p.m. and 45 dBA L_{eq} during the noise-sensitive nighttime hours of 10:00 p.m. to 7:00 a.m.

[1] Impulsive noise is defined as any single noise event or a series of single noise events, which causes a high peak noise level of short duration (one second or less), measured at a specific location (e.g., an explosion or noise generated by construction equipment).

Section 36.409 of the Noise Ordinance controls construction equipment noise and establishes a 75 dBA L_{eq} standard (averaged over an eight-hour period per day) between 7:00 a.m. and 7:00 p.m. Monday through Saturday at the property line of off-site residences during construction.

Section 36.410 of the Noise Ordinance controls impulsive noise and establishes an 82 dB maximum impulsive sound level at the boundary line of a residential property for 25 percent of the minutes in the measurement period (minimum of one hour).

County of San Diego Explosives and Fireworks Ordinance

If it is determined that blasting is required to break rock on a site, a blasting permit from the County Sheriff is required, pursuant to Section 96.1.3301.2 of the County Code. Blasting operations are only allowed Monday through Saturday, between 7:00 a.m. and 6:00 p.m. or one-half hour before sunset, whichever occurs first, unless the Issuing Officer grants approval for different times based on special circumstances. The Applicant must provide written notice of the proposed blasting to all residences and businesses within 600 feet of any potential major blast location or 300 feet from any potential minor blast location at the time of entitlement issuance, and again a minimum of 24 hours prior to blasting activities.[2] Adequate precautions to safeguard persons and property must be taken before, during and after blasting operations. Such required precautions include pre-blast and post-blast inspections of structures within 300 feet; notification to the Issuing Officer at least one hour before blasting; and monitoring of major blasting operations with a seismograph.

County of San Diego Standards for Sensitive Birds

In 1991, the USFWS recommended that noise levels not exceed 60 dBA or ambient conditions (whichever is greater) to protect the coastal California gnatcatcher and other sensitive bird species. Subchapter 2.2, Biological Resources, addresses potential impacts to sensitive birds.

2.5.2 Analysis of Project Effects and Determination as to Significance

2.5.2.1 *Transportation Noise Levels*

Guidelines for Determining Significance

A significant noise impact would occur if the project would:

1. Expose exterior on- or off-site, existing or reasonably foreseeable future, NSLUs to noise in excess of 60 dB CNEL, or 10 dB CNEL or more over existing noise levels.

2. Expose interior on- or off-site, existing or reasonably foreseeable future, NSLUs to noise in excess of 45 dB CNEL.

The above guidelines are based on the County's Guidelines for Determining Significance – Noise (January 27, 2009).

[2] The determination of whether blasting would be "minor" or "major" is based upon the quantity of rock to be blasted, bore hold diameter, hole depth, maximum charge rate and delay. These characteristics will be determined by the blasting contractor, and are not known at this time.

Analysis

The Sound32 traffic noise model was used to project the expected roadway noise impacts. Buena Creek Road would continue to be the primary traffic noise source in the future. This roadway is identified as a Major Road on the County Circulation Element; therefore, traffic speeds were assumed to increase from the current 45 mph to 55 mph in the future, and the proportion of medium and heavy trucks using the roadway was assumed to increase. The associated increase in future traffic noise was therefore reflected in the model.

Exterior Traffic Noise Impact

On Site

The future 60 dB CNEL noise contour would be located approximately 600 feet from the center line of Buena Creek Road, assuming a "soft" site condition and no intervening topography. All of the proposed residential lots would be a minimum of 1,000 feet from this roadway, so would not be located within the modeled 60 dB contour. Additionally, all lots would be located south of a hill. This hill would shield the lots from traffic noise along Buena Creek Road. The intervening topography present provides more than 5 dB of noise attenuation. Thus, the future noise levels at all proposed residential lots would be less than 60 dB CNEL. The noise level would comply with the County's noise criteria. Therefore, exterior traffic noise impacts on site would be **less than significant**.

Off Site

The Environmental Noise Assessment assumed that the Project would ultimately generate a traffic volume of approximately 590 ADT (50 ADT greater than is currently assumed, due to a reduction in the Proposed Project from 47 to 45 residential lots). Cleveland Trail would be utilized for emergency access only; it would not carry daily traffic associated with the Proposed Project. As a result, no increase in routine operational traffic noise along Cleveland Trail would occur due to Project trips, and no impact would result.

The majority of the traffic would be along Buena Creek Road, Robelini Drive and Sugarbush Drive. With the exception of Sugarbush Drive, the additional traffic would increase the noise along the adjacent roads by one dB CNEL or less[3]. The additional Project-generated traffic volume along these roads would not substantially increase the ambient noise level.

The traffic volume would increase by approximately 540 ADT along Sugarbush Drive south of Buena Creek Road. Sugarbush Drive is a lightly traveled residential cul-de-sac street with a traffic volume of approximately 200 ADT (Appendix F). The existing and Project's traffic volumes combined would total approximately 740 ADT. This traffic volume would not generate a 60 dB CNEL noise contour beyond the right-of-way of Sugarbush Drive. The traffic noise level increase is, therefore, considered less than significant. Therefore, exterior traffic noise impacts off site would be **less than significant**.

Interior Traffic Noise Impact

The County requires that interior noise levels not exceed a CNEL of 45 dB. Typically, with the windows open, building shells provide approximately 15 dB of noise reduction. Therefore, rooms exposed to an exterior CNEL greater than 60 dB could result in an interior CNEL greater than 45 dB. As described

[3] The actual increase would be even less than that modeled because the traffic generated by the Proposed Project would be 540 ADT, rather than the 590 ADT assumed in the noise model.

above, the exterior noise level at the proposed residential lots and off-site residences would be less than 60 dB CNEL; thus, the interior noise level would not exceed 45 dB CNEL. Interior traffic noise impacts would be **less than significant**.

2.5.2.2 *Operational Noise Levels*

Guideline for Determining Significance

A significant noise impact would occur if the project would:

3. Generate non-construction noise that exceeds the standards listed in the San Diego County Code, Section 36.404, Sound Level Limits, at all property lines.

The above guideline is based on the County's Guidelines for Determining Significance – Noise (January 27, 2009).

Analysis

The Proposed Project would result in the development of 45 single-family residences. This type of use does not include large mechanical equipment, speakers, chimes, outdoor areas used by large numbers of people or other substantial operational noise sources. It is not, therefore, expected to generate operational noise levels that would exceed the thresholds contained in the County ordinance. Individual property owners would be responsible for ensuring compliance with the Noise Ordinance (e.g., limiting party noise) or would be subject to enforcement action. Operational noise impacts would be **less than significant**.

2.5.2.3 *Construction Noise Levels*

Guideline for Determining Significance

A significant noise impact would occur if the project would:

4. Generate construction noise that exceeds the standards and allowable hours listed in the San Diego County Code, Section 36.409, Sound Level Limitations on Construction Equipment, or impulsive noise that exceeds the standards listed in San Diego Code Section 36.410, Sound Level Limitations on Impulsive Noise.

The above guideline is based on the County's Guidelines for Determining Significance – Noise (January 27, 2009).

Analysis

Construction noise represents a short-term impact on the ambient noise levels. Construction activities would occur during the County's allowable hours of operation. The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed and the condition of the equipment. The average sound level of the construction activity also depends upon the amount of time that the equipment operates and the intensity of the construction during the time period.

Construction would involve several phases, including site preparation activities such as, clearing, grubbing and grading, as well as during foundation construction and finish construction. Project grading

is designed to be balanced; thus, there would be no import or export of dirt by heavy trucks. The maximum noise level ranges for various pieces of construction equipment at a distance of 50 feet are depicted in Table 2.5-1. Note that these are maximum noise levels, not the average sound level otherwise used in this assessment. The average sound level at construction sites is typically less than the maximum noise level because the equipment operates in alternating cycles of full power and low power. Also, the equipment rotates in various directions (i.e., noisiest side of the equipment to quieter sides of the equipment), and moves around the construction site, especially during site preparation activities. Thus, the average noise levels produced are less than the maximum level.

Typically, the greatest one-hour average noise level occurs during clearing, grubbing and grading activities. Construction equipment used during this construction phase typically includes scrapers, dozers, compactors and water trucks. Based on noise measurements conducted during similar construction activities, the one-hour average noise level during ground clearing and grading activities ranges from approximately 75 to 80 dB at 50 feet from the closest construction work area. Equipment operated during the noise measurements typically included three or more scrapers and dozers, and one or two water trucks, backhoes, blades and pickup trucks. Assuming the equipment operates at the same level for an eight-hour period per day, the eight-hour average noise level also would range from 75 to 80 dB at 50 feet.

Construction noise in a well-defined area typically attenuates at approximately six dB per doubling of distance (Beranek and Ver 1992). The property line of the closest off-site existing residence to the construction area is located approximately 10 feet from the grading limits along the western property boundary, where adjacent homes are located approximately 10 to 100 feet from grading limits (refer to Figure 2.5-1).

Because of the presence of hard rock on the site, use of a crawler may be required to rip harder subsurface materials and grub out boulders during rough site grading. The only area within 300 feet of existing homes where cut (potentially requiring ripping) is proposed is on Lots 8 and 9 in the southwestern corner of the property; grading activities along the remainder of the western site boundary would involve the placement of fill material, with cut above levels at which ripping would be required. If ripping is required within 100 feet of a residential property line on these lots, noise levels at the property line could exceed 80 dB (Figure 2.5-2, Noise from Ripping of Subsurface Rock). Blasting or chemical breaking may be necessary where grading equipment cannot break rock adequate to reach required cut depths. Drilling operations typically are required to place the blasting charges or chemical breaking agents. Noise associated with drill rig operations would be consistent with (or less than) the ripping activities. A **temporary significant** noise impact would occur in association with ripping or drilling activities within 100 feet of a residential property line on Lots 8 and 9 **(Impact N-1)**.

Chemical breaking agents would be used instead of blasting where off-site uses are located within 200 feet of non-rippable bedrock. The process consists of drilling holes in the rock, mixing modified cement with water, and pouring it in the holes. The modified cement then expands to place pressure on the surrounding rock, silently fracturing it. The use of chemical breaking agents instead of blasting within 200 feet of off-site residential properties is included as a project design feature in Section 7.2.5 of this EIR. Impacts would be **less than significant**.

Where blasting does occur, associated noise would be isolated in time, and single-event in nature. Given the time to set up blast events, no more than two blasts per day would occur (see project design feature in Section 7.2.5). The short nature of the two blast events would not raise the average noise level at the property line to over 75 dB, nor would it raise the 15-minute minimum noise level at the property line to over 82 dB. Thus, blasting activities would be consistent with County Noise Ordinance Sections 36.409 and 36.410, respectively. Impacts would be **less than significant**.

Depending upon the size of rocks created during grubbing/ripping or blasting, hydraulic breaking may be required prior to on-site use in deep fill. If hydraulic breaking is required, breaking rock within 300 feet of the property line could result in off-site noise impacts. In order to avoid this impact, the breaking location would be restricted to further than 300 feet from the western or northern property boundaries as a project design feature (Section 7.2.5). This locale would be sited within the heart of the residential development bubble (Figure 2.5-3, Noise from Rock Breaking Activities). At this distance, the breaker would be in compliance with the County's standards for general construction noise of 75 dB and impulsive noise standard of 82 dB during a 15-minute period within a minimum one-hour measurement at the property line. Impacts would be **less than significant.**

Other key construction activities would include grading to develop slopes and building pads as well as the construction of the homes. The eight-hour average noise level would exceed 80 dB at the closest homes and at the western property line during grading of the site. This assumes a direct line-of-sight from the receiver to the construction area. A similar potential impact could occur to two homes located adjacent to Cleveland Trail as a result of the proposed emergency access improvements. These noise levels would exceed the County's noise criteria at the adjacent existing residential properties. Construction noise would be less during the later phases, such as foundation construction and framing. A **temporary significant** noise impact would occur in association with construction of the Proposed Project and the off-site improvements to Cleveland Trail **(Impacts N-2a and b**, respectively).

2.5.2.4 *Groundborne Vibration/Noise*

Guidelines for Determining Significance

A significant vibration impact would occur if the project would:

5. Subject residences to:

    a. Ongoing ground-borne vibration levels of 0.0040 inches per second root mean square from frequent events, or 0.010 inches per second root mean square for occasional or infrequent events; and/or
    b. Ongoing ground-borne noise levels of 35 dB re micro Pascals for frequent events or 43 dB re micro Pascals for occasional or infrequent events.

6. Subject residences to vibration from isolated events (e.g., blasting) with peak particle velocity exceeding one inch per second.

The above guideline is based on the County's Guidelines for Determining Significance – Noise (January 27, 2009).

Analysis

The project proposes 45 residential lots where low ambient vibration is essential for interior use and sleeping conditions. The proposed residences would be located over 1,100 feet from any public road or transit right-of-way with projected noise contours of 65 dB or more. A distance of 200 feet usually ensures that the operations do not have any chance of being impacted by groundborne vibration or groundborne noise levels (Harris, Miller, Miller and Hanson Inc., *Transit Noise and Vibration Impact Assessment* 1995). There are no nearby parcels zoned for industrial or extractive uses. Also, the Project does not propose any major, new or expanded infrastructure such as mass transit, highways or major roadways or intensive extractive industry that could generate excessive groundborne vibration or groundborne noise levels and impact vibration-sensitive uses in the surrounding area.

As described in Section 2.5.2.3 and included as a project design feature in Section 7.2.5, blasting activities would not be conducted at a distance of less than 200 feet from any off-site structure. At this distance, a charge weight of 16 pounds[4] with a minimum 8 millisecond delay would result in a peak particle velocity of 0.75 inch per second, less than the County's significance threshold.

Therefore, the Proposed Project would not expose persons to or generate excessive groundborne vibration or groundborne noise levels. Potential groundborne vibration/noise impacts are considered **less than significant.**

2.5.3 Cumulative Impact Analysis

A significant cumulative impact if it would occur if the project would:

- Considerably contribute to a cumulative scenario that would result in the exposure of any on- or off-site, existing or reasonably foreseeable future NSLU, to an increase of 10 dB (CNEL) over pre-existing noise levels resulting in a combined exterior noise level of 60 dB CNEL or greater, or interior noise in excess of 45 dB CNEL, or groundborne vibration/noise levels as specified in Section 2.5.2.4, above. A "cumulatively considerable" project contribution to an identified significant cumulative noise impact would be identified when the project would contribute (1) more than 50 percent of the change or (2) more than a one decibel increase.

This Guideline is based on the County's Guidelines for Determining Significance – Noise (January 27, 2009).

Cumulative noise effects resulting from the Proposed Project primarily would be associated with projected traffic volumes, which would combine with noise resulting from cumulative traffic volumes generated by other projects. As a result, the cumulative noise study area is the same as that for traffic, as shown in Figure 1-8, with cumulative projects summarized in Table 1-2.

As described in Subchapter 2.4, Transportation/Traffic, traffic on roadways in the Project vicinity is expected to increase (in some cases substantially) as a result of increasing development in the area. This increased traffic would result in cumulative noise impacts to NSLUs located adjacent to some area roadways.

The Proposed Project would contribute approximately 540 ADT to Sugarbush Drive south of Buena Creek Road. This roadway currently is a lightly traveled residential cul-de-sac with a traffic volume of approximately 200 ADT. Project traffic would, therefore, result in an increase of approximately 7 dB along this roadway. Given the low traffic volumes, however, a 60 dB CNEL noise contour would not be generated beyond the roadway right-of-way.

The Proposed Project would result in a less than 1 dB increase in traffic noise along each of the other studied roadway segments, as shown on Table 2.5-2. Therefore, the Proposed Project **would not result in a cumulatively considerable contribution to cumulative long-term noise impacts**.

Cumulative noise impacts also may occur if construction were to simultaneously occur on the Project site and other properties in the immediate vicinity. The only identified cumulative projects in the immediate vicinity of the Proposed Project are Fredas Hill, the Kowano Subdivision and Tai Estates. The Fredas Hill project (13 residential units) has been approved and the Kowano Subdivision (8 residential units) was

[4] This charge weight was selected for analysis because it would break up approximately 10 cubic yards of material (a typical truck load).

circulated for public review beginning May 14, 2009. Because these projects are further along in the approval process than the Proposed Project, it is likely that they would be completed prior to construction of the Proposed Project. The Leese Property subdivision (three residential units) along Cleveland Trail also has been approved.. Each of these cumulative projects is located a minimum of 400 feet from construction activities proposed on the Sugarbush Project site. Given the short-term nature of the relatively minor Project-related improvements along Cleveland Trail, it is unlikely that they would occur simultaneously with construction of three single-family residences on the Leese Property. Should such an overlap occur, the potential incremental noise increase would be minimal and would not exceed the County construction equipment noise requirement of 75 dB. The contractors would coordinate to ensure that compliance with the Noise Ordinance is maintained. Similarly, because there are no transportation-based generators that would affect the Proposed Project, there is no identified potential for cumulative long-term vibration impact. The potential for project-related groundborne vibration to combine with any other construction-related groundborne vibration is considered unlikely. This is because blasting is not anticipated to be required for any residential improvements along Cleveland Trail and, even if it should be required, it is not likely that such activity would overlap with the blasting activity on Sugarbush. As a result, cumulative impacts related to construction noise are assessed as **less than significant.**

2.5.4 Significance of Impacts Prior to Mitigation

Impact N-1 A temporary significant impact associated with construction operations (ripping or drilling) may occur to off-site residences.

Impact N-2 A temporary significant impact associated with construction operations (grading) may occur to off-site residences.

2.5.5 Mitigation

The following mitigation measures would reduce potentially significant noise impacts to less than significant levels.

M-N-1 Prior to the approval of any plans, issuance of any permit, and approval of any final map(s), evidence shall be provided to the satisfaction of the Director of DPW that "Specific Environmental Notes" have been placed on the grading and/or improvement plans. If ripping and/or drilling is required on Lots 8 or 9, within 100-feet of a residential property line, an eight-foot tall noise barrier shall be erected along the length of the property line prior to the initiation of such activities. A barrier with a total length of 150 feet (75 feet along each side) adjacent to the corner of the property lines (Figure 2.5-2) will block the line of sight between the residential property and any ripping operations within 100 feet of the property. The sound attenuation barrier shall be a single, solid sound wall and shall be sited at the high point between the generated sound (at the ripping location) and the off-site sensitive receptor. The sound attenuation barrier shall be constructed of wood with no cracks or gaps through or below the wall. Any seams or cracks must be filled or caulked. The wood can be tongue and groove and must be at least one-inch thick or have a surface density of at least 3.5 pounds per square foot.

M-N-2a Prior to the approval of any plans, issuance of any permit, and approval of any final map(s), evidence shall be provided to the satisfaction of the Director of DPW that "Specific Environmental Notes" have been placed on the grading and/or improvement plans. These notes shall specify that heavy equipment planned to be used for the Project are in compliance with Sections 36.409 and 36.410 of the Noise Ordinance or construction activities will be limited to four hours per day on Lots D, E, F and 1 through 9.

M-N-2b Prior to the approval of any plans, issuance of any permit, and approval of any final map(s), evidence shall be provided to the satisfaction of the Director of DPW that "Specific Environmental Notes" have been placed on the grading and/or improvement plans. These notes shall specify that heavy equipment planned to be used for the Project are in compliance with Sections 36.409 and 36.410 of the Noise Ordinance, construction activities will be limited to four hours per day on Cleveland Trail or temporary noise barriers shall be constructed prior to the initiation of grading activities on Cleveland Trail. The barrier shall be 12 feet high to block the line-of-sight between the construction equipment and the adjacent residences, and shall be constructed along the length of the residential property line (Figure 2.5-4), subject to the barrier design specifications provided in M-N-1.

M-N-2c Noise monitoring shall be conducted by an approved County noise consultant during the initial construction equipment operations to ensure that noise levels comply with County Noise Ordinance Section 36.409. Noise monitoring is for construction equipment operations along the western boundary line and improvements to Cleveland Trail. If noise monitoring indicates that the County noise criteria may be exceeded, subsequent monitoring will be conducted after implementation of remedial noise abatement measures. A noise report summarizing the results shall be filed to the satisfaction of the Director of DPLU.

M-N-2d Residents within 200 feet of the construction activities shall be notified of the construction schedule at least one week prior to initial activities. Noticing for any blasting activities would be performed as required under Section 96.1.3301.2 of the County Code.

2.5.6 Conclusion

Temporary construction noise impacts have the potential to be significant (Impacts N-1, N-2a and N-2b). These potential impacts would be mitigated by the implementation of Mitigation Measures M-N-1, M-N-2a and M-N-2b, consisting of reduced construction hours, sound attenuation barriers, or other means that would achieve compliance with Sections 36.409 and 36.410 of the Noise Ordinance, and reduce construction noise impacts to less than significant levels. Noise monitoring (Mitigation Measure M-N-2c) would ensure that construction activities comply with the specified property line noise limits, and notification (Mitigation Measure M-N-2d) would alert residents in the vicinity that there would be construction activity (including potential blasting) and increased noise levels, so that they would be aware of the construction parameters and be able to plan accordingly.

Implementation of the proposed mitigation would ensure compliance with the County Noise Ordinance. The purposes of the Noise Ordinance include controlling disturbing, offensive and excessive noise, providing an environment in which noise is not detrimental to life, health and enjoyment of property and "securing and promoting the public health, comfort, convenience, safety, welfare, prosperity, peace and quiet of the County of San Diego and its inhabitants" (County Code Sections 36.401[b], [d] and [e]). Compliance with Noise Ordinance limits would ensure that noise generated on the Project site would fall within the levels specified in the ordinance. This would comprise effective mitigation as the standards specified in the ordinance are those generally found to be compatible with abutting sensitive receptors. This measure would adequately minimize disturbance to off-site residences.

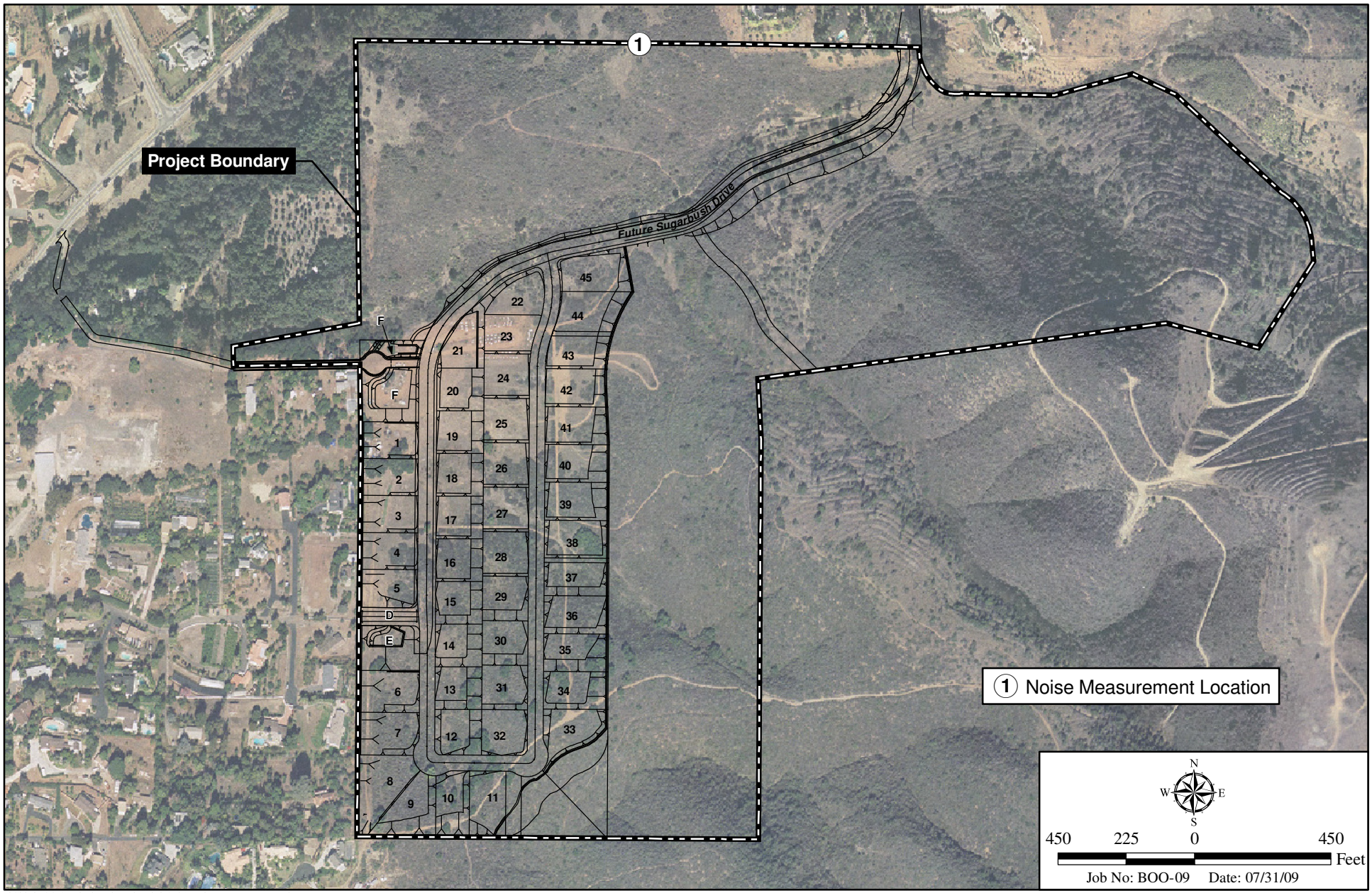
Table 2.5-1
TYPICAL CONSTRUCTION EQUIPMENT NOISE LEVELS

Equipment Item	Range of Noise Level at 50 feet (dBA)	Nominal Noise Level, L_{eq} at 50 feet (dBA)	Height of Noise Source (feet)
Earthmoving			
Backhoes, 200 HP	71 to 93	85	-
Berm Machine, 100 HP	74 to 84	80	-
Dozers (Bull)	72 to 96	86	12
Front Loaders, 300 HP	71 to 96	82	12
Graders (Grader)	73 to 95	85	8
Paver	80 to 92	89	-
Roller, 180 HP	78 to 84	79	-
Scrapers	73 to 95	88	12
Tractors, 200 HP	72 to 96	84	-
Trencher, 80 HP	76 to 86	82	-
Truck/Trailer, 200 HP	70 to 92	82	-
Truck: 125 HP, 150 HP	76 to 85	80, 82	-
Materials Handling			
Concrete Mixer	70 to 90	85	-
Concrete Pump	74 to 84	82	-
Crane, Moveable: 50 HP, 200 HP, 400 HP	75 to 95	76, 80, 83	-
Derrick	86 to 89	88	-
Forklift, 40 HP	68 to 82	80	-
Side Boom, 200HP	80 to 90	85	-
Water Truck, 500 HP	79 to 88	84	3
Stationary Equipment			
Boiler, 1600 HP	79 to 85	82	-
Compressors: 100 HP, 200 HP	68 to 87	78, 81	-
Generators: 20 HP, 400 HP, 1300 HP	69 to 81	74, 81, 84	-
Pumps: 25 HP, 200 HP, 350 HP	60 to 80	73, 76, 80	-
Impact Equipment			
Compactor, 20 HP	84 to 90	86	8
Jack Hammers	75 to 104	88	-
Pile Drivers (Peak Level)	90 to 104	101	-
Pneumatic Tools	82 to 88	86	-
Rock Drills	90 to 105	98	-
Steam Boiler (Pile Driver)	83 to 92	88	-
Other Equipment			
Saws	67 to 92	78	-
Vibrators	69 to 80	76	-
Welding Machines: 50 HP, 80 HP	76 to 85	80, 82	-

Source: Wieland Associates 1999
HP = horse power

Table 2.5-2
OFF-SITE TRAFFIC NOISE LEVEL INCREASE

Street Segment	Existing ADT	Existing Plus Project ADT	CNEL Increase (dB)
Buena Creek Road			
East of Sugarbush Dr.	6,860	7,100	<1
West of Sugarbush Dr.	10,500	10,820	<1
Robelini Dr.			
West of South Santa Fe Ave.	14,900	15,160	<1
South Santa Fe Avenue			
South of Buena Creek Rd.	14,700	14,760	<1
Sugarbush Drive			
South of Buena Creek Rd.	130	720	7
Twin Oaks Valley Road			
South of Buena Creek Rd.	15,300	15,480	<1



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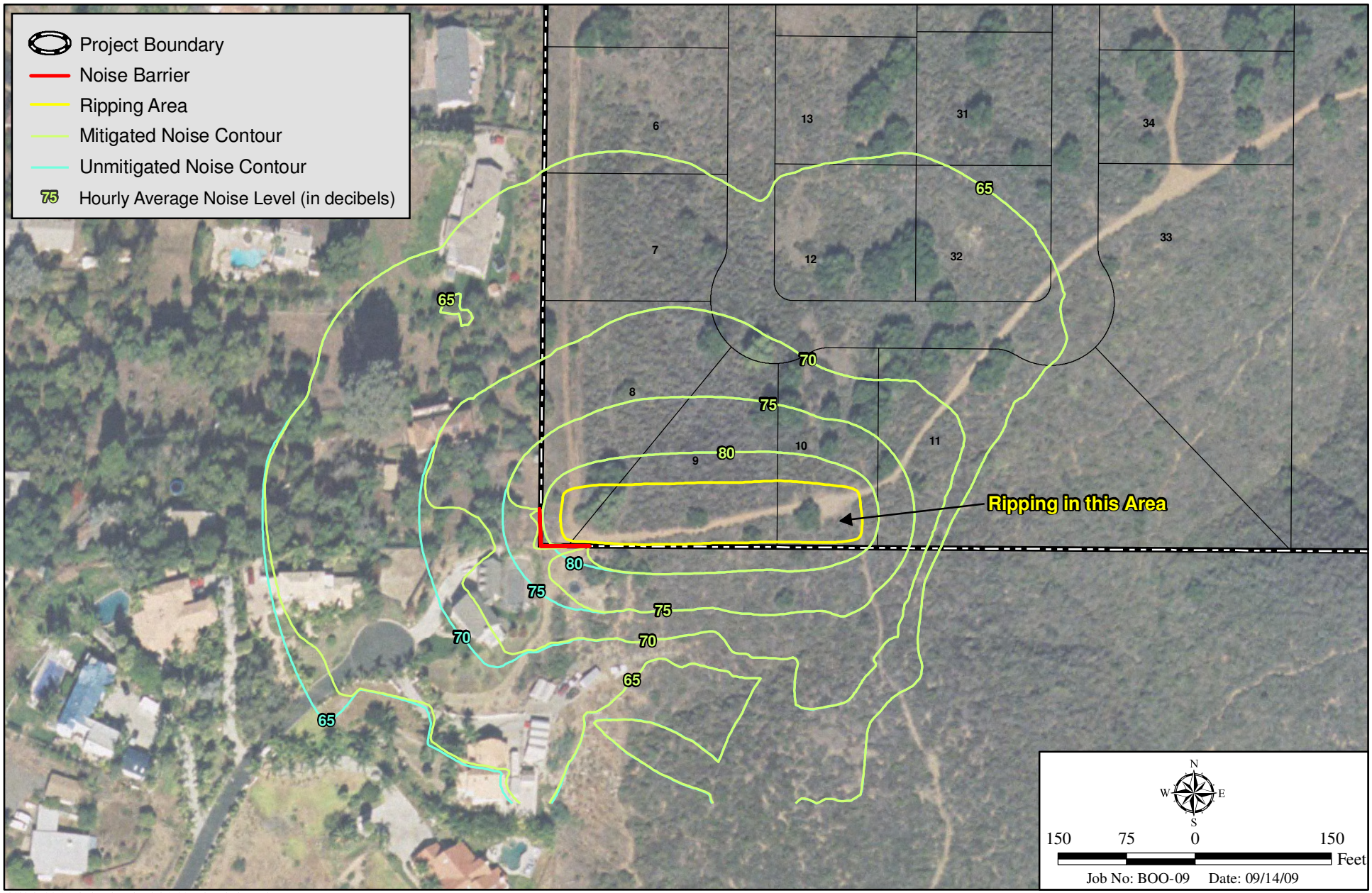
Noise Measurement Location

SUGARBUSH RESIDENTIAL PROJECT

Figure 2.5-1



I:\Gis\B\BOO-07 Vista\Map\ENV\EIR\Fig2-5-2_Noise_Ripping.mxd -KF

Noise from Ripping of Subsurface Rock

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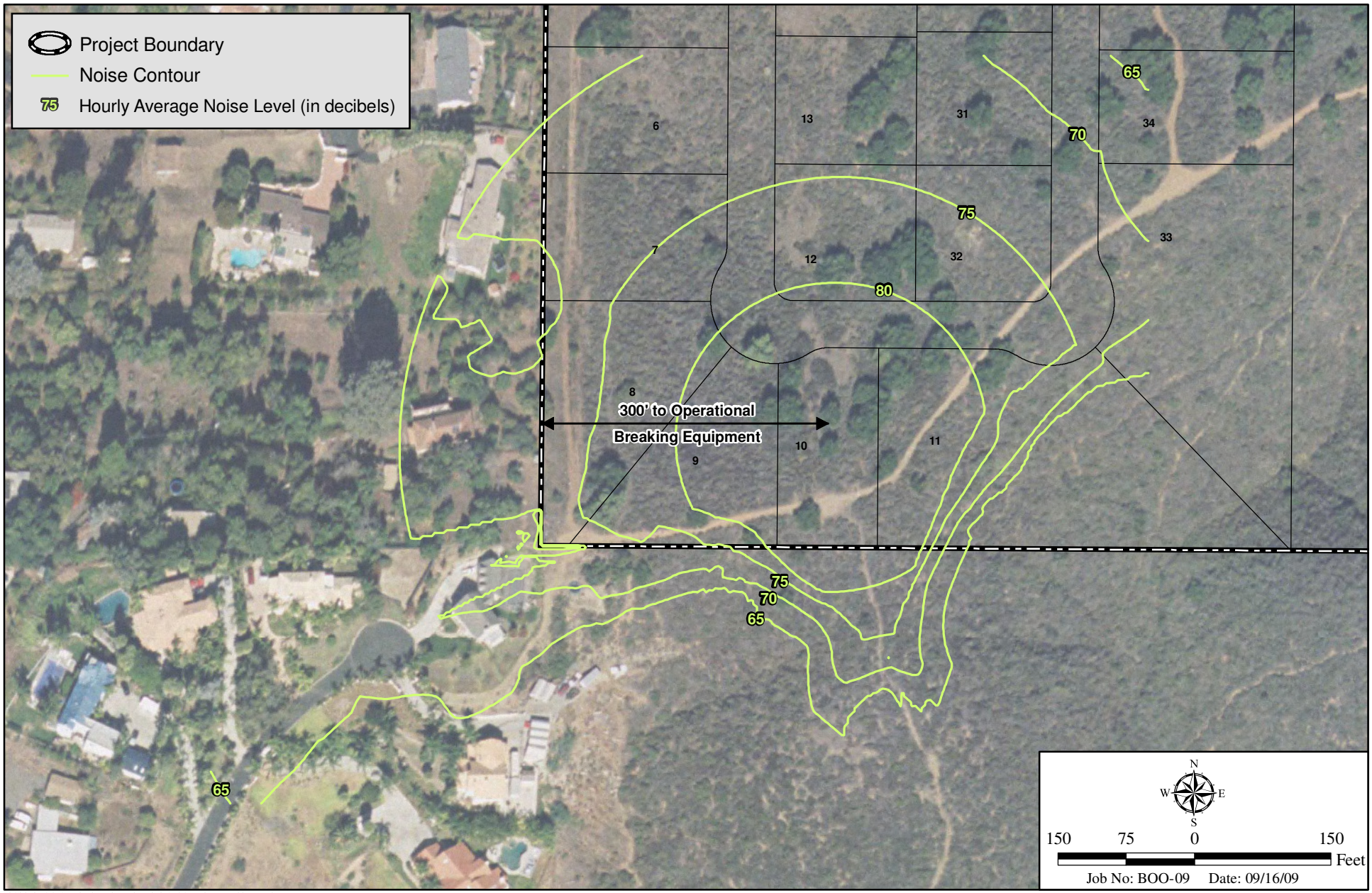
Figure 2.5-2



I:\Gis\B\BOO-07 Vista\Map\ENV\EIR\Fig2-5-3_Noise_Breaking.mxd -KF

Noise from Rock Breaking Activities

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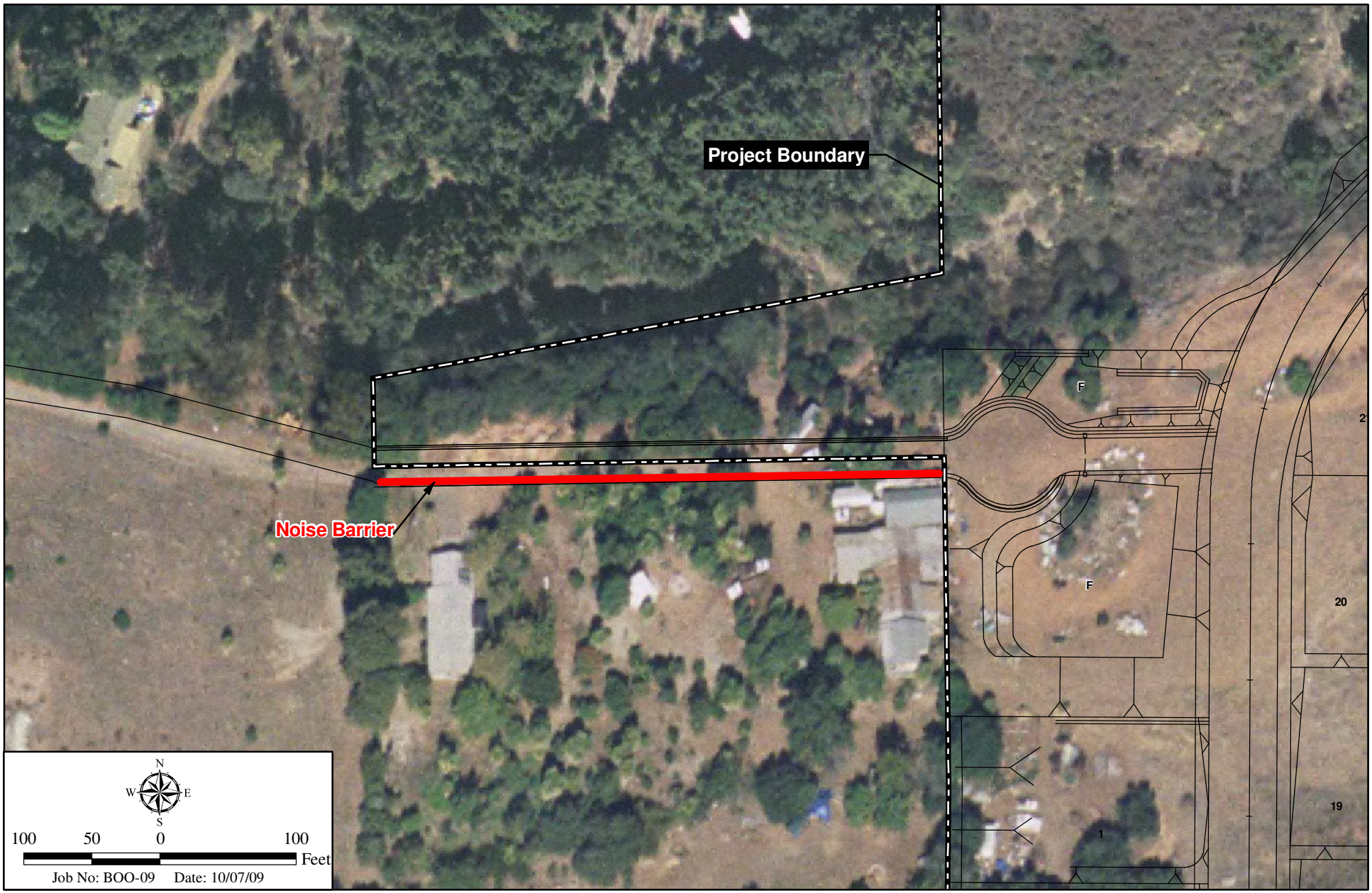
Figure 2.5-3



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Cleveland Trail Construction Noise Barrier

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Figure 2.5-4